

The opinion in support of the decision being entered today is
not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GEORGE HRADIL

Appeal 2007-1209
Application 10/763,979
Technology Center 1700

Decided: July 23, 2007

Before EDWARD C. KIMLIN, BRADLEY R. GARRIS, and,
JEFFREY T. SMITH, *Administrative Patent Judges*.

KIMLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 19 and 21-37.

Claim 19 is illustrative:

19. A method for electroplating a metal deposit on a substrate which comprises contacting a plurality of such substrates with a solution which comprises:

water;

a metal ion in an amount sufficient to provide a metal deposit on a platable substrate;

a complexing agent of an organic compound having between 4 and 18 carbon atoms which compound includes at least two hydroxyl groups and a five or six membered ring that contains at least one oxygen atom, with the compound being present in an amount sufficient to complex the metal ion to render it soluble in the solution and to inhibit oxidation of the metal ion; and

a pH of the solution in the range of between 3.5 and 5.5, adjusted, if necessary, by the addition of a suitable pH adjusting agent;

wherein the complexing agent and metal ion are present in a concentration ratio of between about 2:1 and 9:1 to reduce or minimize agglomeration of the substrates during electroplating; and

passing a current though the solution to provide metal electrodeposits on the substrates without causing significant agglomeration of such substrates during the electroplating;

wherein the substrates are composite articles having electroplatable and non-electroplatable portions.

The Examiner relies upon the following reference as evidence of obviousness:

TORU

JP 02301588 A

Dec. 13, 1990

Appellant's claimed invention is directed to a method for electroplating a metal deposit on a substrate by contacting the substrate with a solution comprising water, a metal ion of the metal to be deposited, and a complexing agent which maintains the metal ion in solution. The complexing agent is an organic compound having between 4 and 18 carbon

atoms, such as ascorbic acid, isoascorbic acid, glucoascorbic acid and glucoronic acid. The pH of the solution is between 3.5 and 5.5 and the ratio of the complexing agent to the metal ion is between about 2:1 and 9:1. According to Appellant, the recited ranges for pH and complexing agent/metal ion ratio avoids significant agglomeration of substrates during the electroplating process while also avoiding damage to the sensitive, non-electroplatable portion of the substrate.

Appealed claims 19 and 21-37 stand rejected under 35 U.S.C. § 103 (a) as being unpatentable of JP '588.

We have thoroughly reviewed each of Appellant's arguments for patentability, as well as the declaration evidence relied upon in support thereof. However, we are in complete agreement with the Examiner that the claimed method would have been obvious to one of ordinary skill in the art within the meaning of § 103 in view of the applied prior art. Accordingly, we will sustain the Examiner's rejection for essentially those reasons expressed in the Answer, and we add the following primarily for emphasis.

There is no dispute that JP '588, like Appellant, discloses a method for electroplating a metal deposit on a substrate with a solution comprising water, the appropriate metal ion and a complexing agents that is an organic compound having between four and 18 carbon atoms and at least two hydroxyl groups and a five or six membered ring that contains at least one oxygen atom, such as the presently claimed ascorbic acid, isoascorbic acid, dehydroascorbic acid, glucoascorbic acid, galacturonic acid, glucoronic acid, or salts thereof. JP '588 does not specifically teach the claimed ranges for pH and ratio of complexing agent to metal ion. However, as explained by

the Examiner, the reference expressly teaches that the "best" pH is in the range of 5-8, and that the complexing agent/metal ion ratio is preferably within ranges that include 4/1. Accordingly, based upon preferences clearly stated in the reference, we are convinced that it would have been obvious for one of ordinary skill in the art to employ an electroplating solution having a pH of 5 and a complexing agent/metal ion ratio of 4/1, which values fall directly within the claimed ranges. Hence, it can not be gainsaid that JP '588 teaches a preference for electroplating solutions that are encompassed by the claimed subject matter. It has been held that the prior art disclosure of a value that falls directly within a claimed range anticipates the claimed range under § 102, and it is well settled that prior art ranges which overlap claimed ranges establish the *prima facie* obviousness of the claimed ranges.

Appellant stresses that "JP '588 does not address the agglomeration problem during plating" (Br. 5, first para.), and that operating within the claimed ranges also minimizes "attack of the non-elecotroplatable portions of composite substrates during electroplating" (Br. 9, last para.). However, as noted by the Examiner, it is well settled that the prior art need not disclose the same purpose or benefits of a claimed method in order to establish its obviousness under 35 U.S.C. § 103. *In re Dillon*, 919 F.2d 688, 693, 16 USPQ2d 1897, 1901 (Fed. Cir. 1990) (en banc), cert. denied, 500 U.S. 904 (1991). In the present case, JP '588 provides ample motivation for utilizing electroplating methods that are embraced by the appealed claims, namely, to achieve a good plating deposit while not attacking parts of the substrate made of ceramic, lead glass, and vacuum deposited aluminum

composite substrates, while achieving high current efficiency over a wide current density range (see Transl. 2, penultimate para.).

Appellant relies upon a Declaration by the inventor as evidence of unexpected results. However, the Declaration falls far short of presenting objective evidence that is commensurate in scope with the degree of protection sought by the appealed claims, and representing a meaningful comparison between methods embraced by the appealed claims and outside the scope of the appealed claims but within the broader disclosure of JP '588. For instance, claim 19, with which all the appealed claims stand or fall, broadly recites the deposition of any metal and fails to specify any particular complexing agent.¹ Significantly, the only objective evidence presented in the declaration is "tests were carried out to repeat Example 1 of the '588 patent" (Decl., para. 5). The Declaration states that the solution representing Example 1 of the '588 patent "became unstable at pHs of above 5.5 with precipitation of the metal components being observed initially as cloudiness (at a pH of 6) to a precipitate of tin hydroxide in the beaker at a pH of 7" (*id.*). The Declaration further states "[i]t is not possible to obtain useful metal deposits with unstable solutions of this type [but that] the solution at a preferred pH in the claimed range, i.e., 5, was completely stable as shown by the clear solution in the beaker" (*id.*).

Manifestly, this limited test described in the Declaration fails to present comparative data between plating methods performed at values within the claimed ranges and values outside the claimed ranges for pH and

¹ Appellant has not set forth an argument that is reasonably specific to any particular claim on appeal. Accordingly, all of the appealed claims stand or fall together with claim 19.

complexing agent/metal ion ratio. Also, any attempt to show that a method described in the prior art is not stable should at least be accompanied by an additional showing that one of ordinary skill in the art, making adaptations within the skill of the art, could not have successfully carried out the prior art method. *In re Lamberti*, 545 F.2d 747, 750, 751, 192 USPQ 278, 280, 281 (CCPA 1976); *In re Weber*, 405 F.2d 1403, 1407, 160 USPQ 549, 553 (CCPA 1969); *In re Michalek*, 162 F.2d 229, 231-32, 74 USPQ 107, 109 (CCPA 1947). No such evidence of reasonable adaptations is of record. Furthermore, a pH of 5 that is said to produce a completely stable solution is a pH value that is specifically taught as preferable by the reference. Moreover, as noted above, this limited declaration evidence fails to establish that the myriad of methods within the broad scope of the appealed claims are unexpectedly superior to plating methods fairly taught by JP '588. We also note that the technical paper referenced in paragraph 6 of the Declaration is not part of the Declaration evidence.

In conclusion, it is our judgment that the evidence of obviousness presented by the Examiner outweighs the evidence of nonobviousness offered by Appellant. Accordingly, based on the foregoing and the reasons set forth by the Examiner, the Examiner's decision rejecting the appealed claims is affirmed.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(iv)(effective Sept. 13, 2004).

AFFIRMED

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